Docket No.: <u>CIT/K-0108</u>   PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re Application of   :

Jin Soo LEE and Hyeon Jun KIM   :

Application No.: 09/495,250   : Group Art Unit: 2172
                                              :
Confirm. No.: 4616   : Examiner: Isaac M. Woo
                                              :
Filed: 10/9/2003   : Customer No.: 34610
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For: METHOD OF SEARCH MULTI-MEDIA DATA

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REPLY BRIEF UNDER 37 C.F.R. §1.193   MAR 3 1 2004

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Sir:

This is a Reply Brief submitted in response to the Examiner's Answer mailed January 28,

2004 in the above-identified application. This Appeal Brief is filed within two months of the

date of the Examiner's Answer and is submitted in triplicate.

Issue 1:

A *prima facie* case of anticipation has not been established in the rejection of claims 13 and 14 under 35 U.S.C. §102(e) because Kuperstein et al. does not disclose incorporating weight information of features and weight information of feature elements.

To establish a *prima facie* case of anticipation under 35 U.S.C. § 102, a single prior art reference must describe each and every element as set forth in the subject claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the Y claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Also see M.P.E.P. §2131.

Claims 13 and 14 recite a method of constructing a multimedia data. This method includes incorporating weight information "including weight information of said features and weight information of said feature elements." The Kuperstein et al. patent does not teach or suggest this step.

The Kuperstein et al. patent discloses a system for performing facial recognition. The system operates by isolating a face in an image, developing a set of features in the face, and then assigning weights to each of the features in the set. In the Examiner's Answer, the Examiner drew a correspondence between each facial image in the Kuperstein et al. patent and the "feature" recited in claim 13. Specifically, the Examiner indicated that each facial image is a

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feature that includes feature elements, for instance, eyes, nose, mouth, etc. Given this correspondence, the Kuperstein et al. patent does not disclose incorporating "weight information of said features and weight information of said feature elements."

More specifically, under the Examiner's interpretation, a feature as recited in the claims corresponds to a facial image and the different facial characteristics (e.g., eyes, nose, mouth) correspond to feature elements. The Kuperstein et al. system assigns weights within a neural network to each of these facial characteristics, however Kuperstein et al. does not disclose assigning weights to the facial image itself, which is indicated by the Examiner to correspond to the "feature" recited in the claims.

To support his position, the Examiner relied on the following portions of Kuperstein et al. "1) col. 2, lines 63-67 to col. 3, lines 1-30; and 2) col. 6, lines 15-57. The first portion of Kuperstein et al. (col. 2, line 63 – col. 3, line 30) discloses forming a feature set for each facial image and then assigning each element to the feature set to a look-up table of weights, where each weight set comprises a plurality of weights which correspond to each element in the feature set. This portion of Kuperstein et al., thus, discloses assigning weights to each individual feature in a facial image, but does not disclose assigning a weight to the facial image itself as required by claim 13.

The second portion of Kuperstein et al. (col. 6, lines 16-57) provides a more in-depth discussion of how the weights are assigned to the individual features in each facial image considered for recognition. Specifically, features in each of the images are assigned weights. Weight vectors are then generated and these vectors are compared using a dot product operation. The result of a dot product operation provide an indication of whether a match exists between the two facial images. While this portion of Kuperstein et al. discloses assigning weights to the individual features of the facial image, neither this portion or any other portion of Kuperstein et al. discloses assigning weights to the facial images themselves.

Moreover, Appellants submit the claimed invention and Kuperstein perform different methods. Claim 13 recites a method that involves searching multimedia data. The Kupersten patent does not disclose performing this function. Rather, Kuperstein focuses on verifying whether two facial images are related to a same person. (See the summary section). Kuperstein never performs a multimedia data search and thus does not disclose the method defined in the claims.

Further, the Examiner's assumption that Kuperstein discloses performing an image search based on "features" that include "feature elements" as recited in claim 13 is improper. Claim 13 recites searching multimedia data based not only on "features" but also on "feature elements." Kuperstein does not perform a search of this type. Each image considered by the Kuperstein method includes eyes, nose, mouth, etc. The Examiner has drawn a correspondence

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between the eyes, nose, mouth, etc. in these images and the "features" recited in claim 13.

Assuming *arguendo* that this correspondence is valid, Kuperstein does not then further disclose

performing a multimedia data search based on "features elements," i.e., Kuperstein does not

disclose performing an image search based on "feature elements" of the eyes, nose, mouth

included in the images considered by Kuperstein. Put differently, even if the eyes, nose, mouth,

etc. can be matched to the "features" recited in claim 13, Kuperstein would still fail to disclose

the "feature elements" recited in this claim and of assigning weight information to such feature

elements for purposes of performing a multimedia data search.

Because Kuperstein et al. does not disclose all the features in claim 13, a *prima facia* case

of anticipation has not been established under 35 U.S.C. § 102 for claim 13.   Accordingly,

Appellants respectfully submit that the rejection of claim 13 is improper as a matter of law.

Claim 14 depends from claim 13 and has been rejected for being anticipated by

Kuperstein et al. Appellants respectfully submit that the rejection of claim 14 is in error at least

by virtue of the dependency of claim 14 from claim 13.

Issue 2:

A *prima facie* case of obviousness has not been established in the rejection of claims 21-26 under 35 U.S.C. § 103(a) because Binns et al. does not disclose correlating a first image that is similar to a target image and a second image which is dissimilar to the target image to construct a search criteria.

To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Second, there must be some suggestion or motivation in the references themselves to modify the references or to combine reference teachings. Third, there must be a reasonable expectation of success for the modification or combination of references. The teaching or suggestion to make the modification or combination of prior art and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). There must be particular findings as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge to the claimed invention to combine or modify references. *In re Kotzab*, 217 F.3d 1365, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000). Conclusory statements cannot be relied up for particular combinations of prior art and specific claims. *In re Lee* 277 F.3d 1338, 61U.S.P.Q.2d 1430 (Fed. Cir. 2002).

Claim 21 recites a method for searching for a target image based on a search criteria. This method includes inputting a first image that is similar to the target image, inputting the

second image that is dissimilar to the target image, and "correlating the first image and the second image to **construct** the search criteria." (Emphasis added) Binns et al. fails to teach or suggest at least the correlating step of the claimed method.

Binns et al. discloses a method for generating a three-dimensional image from two two-dimensional images. As shown in Fig. 5, the images 500 and 510 are input into an interactive image correlation processor 520. Selected portions of the first image 500 are then compared to the second image 510 and a correlation result is obtained. The results may be changed by an operator and subsequent correlations may be performed. When the correlation process is complete, a stereo display system 540 outputs a three-dimensional image based on the two two-dimensional input images.

Binns et al., therefore, does not perform the step of "searching for a target image" as recited in claim 21. Rather, as noted, Binns et al. generates a three-dimensional image from two or more two-dimensional images. No searching is performed for a target image as claimed. In the Examiner's Answer, the Examiner appears to have taken the position that Binns et al. searches for a target image, for example, from a plurality of images stored in the database. Upon closer review, however, this is not the case. Binns et al. makes clear that the purpose of its method is to generate a three-dimensional image from two-dimensional images, not to search for a target image as recited in claim 21.

Claim 21 further recites "correlating the first image and the second image to construct the search criteria." Binns et al. does not teach or suggest these features. Specifically, in correlating two two-dimensional input images, Binns et al. performs actual comparisons between reference and target patches selected by the correlation patch attribute and a location generator." The patches which are compared between the images may be selected by user. Binns et al, however,. does not teach or suggest that the first and second images are correlated for purposes of constructing a search criteria for searching for a target image as recited in claim 21.

Based on at least the foregoing differences, it is respectfully submitted that a *prima facia* case of obviousness cannot be established for claim 21 based on Binns et al. and therefore, the rejection of claim 21 is improper as a matter of law. Claims 22 and 23 depend from claim 21 and are non-obviousness and thus patentable over Binns et al. at least by virtue of their dependency from claim 21.

Claim 24 recites an apparatus configured to "search for a target image based on a search criteria," wherein the search is performed by "correlating the first image and second image to construct a search criteria." Binns et al. does not teach or suggest these quoted features. Absent these features, Appellants respectfully submit that a *prima facia* case of obviousness cannot be established for claim 24 based on Binns et al.. Claims 25 and 26 depend from claim 24 and are non-obvious and thus patentable over Binns et al. at least by virtue of this dependency.

CONCLUSION

Appellants respectfully request the Board of Patent Appeal and Interferences to withdraw

the rejections of claims 13, 14 and 21-26 for the foregoing reasons.

Respectfully submitted,
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